

Remarks:

Claims 1-9 and 11-43 are pending in this application; claims 2-9, 13, 22, and 24-43 have been withdrawn from consideration. In the Office Action mailed February 26, 2004, the Office rejected claims 1, 12, 14-17, 19-21, and 23. With the present Response, claims 1, 12, and 21 are amended.

The Office indicates all 35 U.S.C. §§ 102(b) and 103(a) rejections are “maintained for the reason on record and reason as follows” (Office Action, page 2, section I), yet the Office fails to state any additional reasons why the claims are rejected under 35 U.S.C. §§ 102(b) and 103(a). The only new rejection in the Office Action is under 35 U.S.C. § 112, second paragraph. Thus, Applicants will treat the art-based rejections to the extent they are maintained.

Claim Rejections - 35 U.S.C. § 102

The Office rejects claim 1 under 35 U.S.C. § 102(b) as being anticipated by Mathur *et al.* (Indian Journal of Mycology and Plant Pathology 20(2) 192-193 (1990)). The Office asserts that Mathur teaches a composition for controlling stripe disease infection in barley comprising 2,4-D, *i.e.*, 2,4-dichlorophenoxy acetic acid, and a composition for controlling stripe disease in barley comprising copper, and that such compositions are applied to barley plants. The Office asserts that it is inherent that application of 2,4-D and copper onto barley plants would induce isoflavone production and induce disease resistance in the barley plant. (Previous Office Action.)

Claim 1 requires that R12 is a branched aliphatic chain. As there is no branching in 2,4-dichlorophenoxy acetic acid, Applicants respectfully submit that the disclosure of Mathur *et al.* does not anticipate claim 1 as currently drafted. Applicants respectfully request the Office withdraw the rejection of claim 1 in view of Mathur *et al.*

The Office rejects claims 1 and 15-17 under 35 U.S.C. § 102(b) as allegedly anticipated by Gillespie *et al.* (WO 98/17109). The Office asserts that Gillespie *et al.* teaches applying a composition comprising 2,4-D (2,4-dichlorophenoxy acetic acid), which composition may further comprise additional compounds, onto the foliage of a plant.

As noted above, claim 1, upon which claims 15-17 ultimately depend, requires that R12 is a branched aliphatic chain. And as noted above, 2,4-dichlorophenoxy acetic acid does not include a branched aliphatic chain. Thus, Applicants respectfully submit that the disclosure of Gillespie *et al.* does not anticipate claim 1 as currently drafted. Applicants respectfully request the Office withdraw the rejection of claims 1 and 15-17 in view of Gillespie *et al.*

The Office rejects claims 1, 15, 19, and 20 under 35 U.S.C. § 102(b) as allegedly anticipated by Chamblee *et al.*¹ (U.S. Patent No. 4,274,861). The Office asserts that Chamblee *et al.* teaches applying a composition comprising 2,4-D (2,4-dichlorophenoxy acetic acid) and alcohol to a soybean plant. As noted above, claim 1, upon which claims 15, 19, and 20 ultimately depend, requires that R12 is a branched aliphatic chain. As noted, 2,4-dichlorophenoxy acetic acid does not include a branched aliphatic chain. Thus, Applicants respectfully submit that the disclosure of Chamblee *et al.* does not anticipate claim 1 as currently drafted. Applicants respectfully request the Office withdraw the rejection of claims 1, 15, 19, and 20 in view of Chamblee *et al.*

Claim Rejections - 35 U.S.C. § 103

The Office rejects claims 12, 14, 21, and 23 under 35 U.S.C. § 103(a) as being unpatentable over Mathur *et al.* The Office asserts that Mathur teaches a composition for

¹ This document is issued to Henderson *et al.*, Henderson being the first named inventor. Chamblee is the second inventor listed on the patent.

controlling stripe disease infection in barley comprising 2,4-D (2,4-dichlorophenoxy acetic acid) and a composition for controlling stripe disease in barley comprising copper, and that such compositions are applied to barley plants. The Office admits that Mathur *et al.* does not teach a composition comprising *both* 2,4-D and copper, but that such combination would have been obvious. The Office asserts that one would have been motivated to combine 2,4-D and copper into a single composition to “make the most effective composition” for controlling stripe infection in barley.

A *prima facie* case of obviousness has three requirements. First, each element of the rejected claim must be found in the modified or combined references. Second, there must be some expectation of success in the modification or combination. Finally, there must be motivation to make the change or combination in the first place. In this rejection, none of these requirements have been satisfied.

Without explicitly stating, the Office has read Applicants' claimed compound V as encompassing 2,4-dichlorophenoxy acetic acid, and Applicants' claimed enhancing compound as encompassing copper. However, the Office fails to provide any support for its implied assertion that 2,4-dichlorophenoxy acetic acid would *necessarily* induce isoflavone production, or that copper would *necessarily* enhance the release of isoflavones or enhance aglycone incorporation into glyceollin. Thus, the Office has failed to establish that all of the claimed elements are present in the modified teaching of Mathur *et al.*

Also, the Office has failed to provide any evidence that a) isoflavone production would be induced, and that b) isoflavone release would be enhanced or that aglycone incorporation into glyceollin would be enhanced. The Office has provided no reason to believe that the combination of 2,4-dichlorophenoxy acetic acid and copper would result in the claimed

invention. Thus, the Office has failed to satisfy the second requirement of a *prima facie* case of obviousness, *i.e.*, that there be an expectation of success.

Finally, despite the Office's lip service to the requirement for motivation, motivation to make the change to Mathur *et al.*'s teachings is absent. There is nothing in Mathur *et al.* that would lead one of skill in the art to combine 2,4-D with copper. There is nothing in Mathur *et al.* that would suggest an additive or even synergistic effect in the combination. There is no reason to believe that the combination would achieve any greater effect than either agent alone.

Indeed, if one were relying solely on the abstract of Mathur *et al.*, one might choose zinc and boron, but not 2,4-D and copper. Copper was identified by Mathur *et al.* as being one of the least effective of the minerals tested, and 2,4-D was even less effective. If one were to rely solely on the teachings of Mathur *et al.*, one would surely not pick copper to be combined with 2,4-D. Thus, there is simply nothing in Mathur *et al.* to support the Office's assertion that one skilled in the art would have combined 2,4-D with copper to "make the most effective composition."

In view of these points, Applicants respectfully submit that a *prima facie* case of obviousness has not been made in this case.

Moreover, Applicants note that claims 12 and 21 require that R12 is a branched aliphatic chain. As 2,4-dichlorophenoxy acetic acid does not have a branched aliphatic chain, it does not meet the limitations of the claim. For this reason as well, Applicants submit that a *prima facie* case of obviousness does not exist in this case.

Claim Rejections - 35 U.S.C. § 112

The Office rejects claims 1, 11, 12, 14-21, and 23 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention. In particular, the Office asserts that if the number of carbon atoms in the aliphatic chain is 1 or 2, then the chain cannot be branched.

In response, Applicants have amended the independent claims to require that the chain length range from 3 to 8 carbon atoms. It is respectfully submitted that this amendment corrects the indefiniteness.

Support for the amendment is found in the original claim, which encompassed both straight and branched chains: as the Examiner has correctly noted, a branched chain by its very nature *must* have three or more carbons. Thus, the recitation of “a branched or linear aliphatic chain comprising 1-8 carbons” inherently describes i) linear chains from 1-8 carbons and ii) branched chains from 3-8 carbons.

Conclusion

Applicant respectfully requests that this Response under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 1, 12, 14-17, 19-21, and 23 in condition for allowance. Applicant submits that the proposed amendments of claims 1, 12, and 21 do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined. Therefore, this Amendment should allow for immediate action by the Examiner.

Finally, applicant submits that the entry of the amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

In view of the foregoing remarks, Applicant submits that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicant therefore requests the entry of this Amendment, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account number 03-0172.

Respectfully submitted,

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